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Reply to Office Action of June 21, 2004

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

1. (previously presented) A coupling apparatus for transmitting a rotational force from a driving shaft with an axis to a driven shaft such that the driven shaft may move freely within a predetermined deflection angle between the driving shaft and the driven shaft, said coupling apparatus comprising:

a first yoke, a second yoke, a universal joint cross, a first internal restricted swing mechanism, and a second internal restricted swing mechanism;

said first yoke and said second yoke each including a first tine, a second tine, a shaft connector, an inner yoke surface, and an outer yoke surface;

said universal joint cross including four ends, said first and third ends of said universal joint cross sized and shaped to oppose each other and said second and fourth ends of said universal joint cross sized and shaped to oppose each other;

said first and third ends of said universal joint cross being pivotally connected to said first yoke first and second tines, respectively, and said second and fourth ends of said universal joint cross being pivotally connected to said second yoke first and second tines, respectively;

said first yoke shaft connector being sized and shaped to connect to the driving shaft;

said second yoke shaft connector being sized and shaped to connect to the driven shaft;

said first internal restricted swing mechanism being sized and shaped to approximate said first yoke inner yoke surface, said first internal restricted swing mechanism being positioned between said first and second tines of said first yoke and pivotally attached to said second yoke first and second tines; and

said second internal restricted swing mechanism being sized and shaped to

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approximate said second yoke inner yoke surface, said second internal restricted swing mechanism being positioned between said second yoke first and second tines and pivotally attached to said first yoke first and second tines.

2. (previously presented) A coupling apparatus for transmitting a rotational force from a driving shaft with an axis to a driven shaft, such that the driven shaft may move freely within a predetermined deflection angle between the driving shaft and the driven shaft, said coupling apparatus comprising:

a first yoke, a second yoke, a universal joint cross, a first internal restricted swing mechanism, a second internal restricted swing mechanism, a first fastener, and a second fastener;

said first yoke and said second yoke each include a first tine, a second tine, a shaft connector, an inner yoke surface, and an outer yoke surface;

said universal joint cross including four ends, said first and third ends of said universal joint cross sized and shaped to oppose each other and said second and fourth ends of said universal joint cross sized and shaped to oppose each other;

said first and third ends of said universal joint cross being pivotally connected to said first yoke first and second tines, respectively, and said second and fourth ends of said universal joint cross being pivotally connected to said second yoke first and second tines, respectively;

said first yoke shaft connector being sized and shaped to connect to the driving shaft;

said second yoke shaft connector being sized and shaped to connect to the driven shaft;

said first fastener being positioned between said first yoke first and second tines; said first fastener is connected to said second yoke first and second tines;

said second fastener being positioned between said second yoke first and second tines; said second fastener is connected to said first yoke first and second tines;

said first internal restricted swing mechanism being sized and shaped to approximate said first yoke inner yoke surface, said first internal restricted swing

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mechanism being positioned between said first yoke first and second tines and pivotally attached about said first fastener; and

said second internal restricted swing mechanism being sized and shaped to approximate said second yoke inner yoke surface, said second internal restricted swing mechanism being positioned between said second yoke first and second tines and pivotally attached about said second fastener.

3. (canceled)

4. (previously presented) The coupling apparatus of Claim 1 or 2 wherein said first internal restricted swing mechanism and said second internal restricted swing mechanism are constructed from a force absorbing material to dampen the flexing of the driven shaft about the axis of the driving shaft.

5. (withdrawn) A method of limiting a deflection angle between a driving shaft and a driven shaft comprising the steps of:

coupling the driving shaft to the driven shaft with a coupling apparatus, said coupling apparatus having one or more internal angle limits;

varying the deflection angle between the driving shaft and the driven shaft;

restricting the driven shaft to a maximum deflection angle from the driving shaft when one or more of said internal angle limits reach a predetermined maximum deflection angle.

6. (withdrawn) A brush mounting apparatus for a vehicle wash apparatus comprising a wrap brush assembly supporting means, a wrap brush assembly for washing one or more surfaces of a vehicle relative thereto, a shaft for rotating the wrap brush assembly, the shaft having a first end and a second end, a motor means for rotating the shaft and mounted on the wrap brush assembly supporting means and connected to the

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first end of the shaft, the brush mounting apparatus comprising:

a first yoke, a second yoke, a universal joint cross, a first internal restricted swing mechanism, and a second internal restricted swing mechanism;

said first yoke and second yoke each have a first tine, a second tine, a shaft connector, an inner yoke surface, and an outer yoke surface;

said universal joint cross has four ends, said first and third ends of said universal joint cross sized and shaped to oppose each other and said second and fourth ends of said universal joint cross sized and shaped to oppose each other;

said first and third ends of said universal joint cross are pivotally connected to said first and second tines of said first yoke, respectively, and said second and fourth ends of said universal joint cross are pivotally connected to said first and second tines of said second yoke, respectively;

said shaft connector of said first yoke sized and shaped to connect to the second end of the shaft;

said shaft connector of said second yoke is connected to the wrap brush assembly;

said first internal restricted swing mechanism is sized and shaped to approximate said inner yoke surface of said first yoke, said first internal restricted swing mechanism is positioned between said first and second tines of said first yoke and is pivotally attached to said first and second tines of said second yoke; and

said second internal restricted swing mechanism is sized and shaped to approximate the inner yoke surface of said second yoke, said second internal restricted swing mechanism is positioned between said first and second tines of said second yoke and is pivotally attached to said first and second tines of said first yoke

7. (withdrawn) A brush mounting apparatus for a vehicle wash apparatus comprising a wrap brush assembly supporting means, a wrap brush assembly for washing one or more surfaces of a vehicle relative thereto, a shaft for rotating the wrap brush assembly, the shaft having a first end and a second end, a motor means for rotating the shaft and mounted on the wrap brush assembly supporting means and sized and shaped to

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connect to the first end of the shaft, a brush mounting apparatus comprising:

a first yoke, a second yoke, a universal joint cross, a first internal restricted swing mechanism, a second internal restricted swing mechanism, a first fastener, and a second fastener;

said first yoke and second yoke each have a first tine, a second tine, a shaft connector, an inner yoke surface, and an outer yoke surface;

said universal joint cross has four ends, said first and third ends of said universal joint cross sized and shaped to oppose each other and said second and fourth ends of said universal joint cross sized and shaped to oppose each other;

said first and third ends of said universal joint cross are pivotally connected to said first and second tines of said first yoke, respectively, and said second and fourth ends of said universal joint cross are pivotally connected to said first and second tines of said second yoke, respectively;

said shaft connector of said first yoke sized and shaped to connect to the second end of the shaft;

said shaft connector of said second yoke is connected to the wrap brush assembly;

said first fastener is positioned between said first and second tines of said first yoke; said first fastener is pivotally connected to said first and second tines of said second yoke;

said second fastener is positioned between said first and second tines of said second yoke; said second fastener is pivotally connected to said first and second tines of said first yoke;

said first internal restricted swing mechanism is sized and shaped to approximate the inner yoke surface of said first yoke, said first internal restricted swing mechanism is positioned between said first and second tine tines of said first yoke and is pivotally attached about said first fastener; and

said second internal restricted swing mechanism is sized and shaped to approximate the inner yoke surface of said second yoke, said second internal restricted swing mechanism is positioned between said first and second tine tines of said second

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yoke and is pivotally attached about said second fastener.

8. (withdrawn) A brush mounting apparatus for a vehicle wash apparatus comprising a wrap brush assembly supporting means, a wrap brush assembly for washing one or more surfaces of a vehicle relative thereto, a shaft for rotating the wrap brush assembly, the shaft having a first end and a second end, a motor means for rotating the shaft and mounted on the wrap brush assembly supporting means and sized and shaped to connect to the first end of the shaft, said brush mounting apparatus comprising:

a first yoke, a second yoke, a universal joint cross, a first internal restricted swing mechanism, a second internal restricted swing mechanism, four bearing mounts, and four bearings;

each of said first yoke and second yoke has a first tine, a second tine, an inner yoke surface, an outer yoke surface, a shaft connector and is formed to provide a yoke aperture or notch in said first tine and said second tine of said first and second yokes;

said first bearing mount is secured to said outer yoke surface about said aperture or notch of said first tine of said first yoke;

said first bearing is secured in said first bearing mount;

said second bearing mount is secured to said outer yoke surface about said aperture or notch of said second tine of said first yoke;

said second bearing is secured in said second bearing mount;

said third bearing mount is secured to said outer yoke surface about said aperture or notch of said first tine of said second yoke;

said third bearing is secured in said third bearing mount;

said fourth bearing mount is secured to said outer yoke surface about said aperture or notch of said second first tine of said second yoke;

said fourth bearing is secured in said fourth bearing mount;

said universal joint cross has four ends, said first and third ends of said universal joint cross sized and shaped to oppose each other and said second and fourth ends of said universal joint cross sized and shaped to oppose each other;

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said first and third ends of said universal joint cross extend through said apertures or notch of said first yoke to be pivotally connected to said first and second bearings, respectively, and said second and fourth ends of said universal joint cross extend through said apertures or notch of said second yoke to be are pivotally connected to said third and fourth bearings, respectively;

said first yoke is connected to the second end of the shaft;

said second yoke is connected to the wrap brush assembly;

said first internal restricted swing mechanism is sized and shaped to approximate the inner yoke surface of said first yoke, said first internal restricted swing mechanism is positioned between said first and second tines of said first yoke and is pivotally attached to said first and second tines of said second yoke; and

said second internal restricted swing mechanism is sized and shaped to approximate the inner yoke surface of said second yoke, said second internal restricted swing mechanism is positioned between said first and second tines of said second yoke and is pivotally attached to said first and second tines of said first yoke.

9. (withdrawn) The brush mounting apparatus of Claim 7 wherein said coupling apparatus is retro-fit to an existing vehicle wash apparatus.

10. (withdrawn) A method of cleaning any of many exterior surfaces of a vehicle in a vehicle wash apparatus that includes:

- i) a wrap brush assembly supporting means,
- ii) a wrap brush assembly for washing one or more surfaces of the vehicle relative thereto,
- iii) a shaft for rotating the wrap brush assembly, the shaft having a first end and a second end,
- iv) a motor means for rotating the shaft; the motor means is mounted on the wrap brush assembly supporting means and is connected to the first end of the shaft,
- v) a brush mounting apparatus having a first yoke, a second yoke, a universal

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joint cross, a first internal restricted swing mechanism, and a second internal restricted swing mechanism, said first yoke and second yoke each have a first tine, a second tine, a shaft connector, an inner yoke surface, and an outer yoke surface, said universal joint cross has four ends, said first and third ends of said universal joint cross sized and shaped to oppose each other and said second and fourth ends of said universal joint cross sized and shaped to oppose each other, said first and third ends of said universal joint cross are pivotally connected to said first and second tines of said first yoke, respectively, and said second and fourth ends of said universal joint cross are pivotally connected to said first and second tines of said second yoke, respectively, said shaft connector of said first yoke is connected to said second end of the shaft, said shaft connector of said second yoke is connected to the wrap brush assembly, said first internal restricted swing mechanism is sized and shaped to approximate said inner yoke surface of said first yoke, said first internal restricted swing mechanism is situated between said first and second tines of said first yoke and is pivotally attached to said first and second tines of said second yoke, and said second internal restricted swing mechanism is sized and shaped to approximate the inner yoke surface of said second yoke, said second internal restricted swing mechanism is situated between said first and second tines of said second yoke and is pivotally attached to said first and second tines of said second yoke, said method comprising the steps of:

rotating the wrap brush assembly about an axis that is generally parallel to one of the many exterior surfaces of the vehicle;

engaging the wrap brush assembly against the exterior surface of the vehicle;

moving the rotating wrap brush assembly about the exterior surface or surfaces of the vehicle; and

disengaging the wrap brush assembly from any of the many exterior surfaces of the vehicle.

11. (withdrawn) A method of cleaning any of many exterior surfaces of a vehicle

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as the vehicle advances through a vehicle wash apparatus that includes:

- i) a wrap brush assembly supporting means,
- ii) a wrap brush assembly for washing one or more of the exterior surfaces of the vehicle relative thereto,
- iii) a shaft with an axis for rotating the wrap brush assembly, the shaft having a first end and a second end,
- iv) a motor means for rotating the shaft, the motor means is mounted on the wrap brush assembly supporting means and is connected to the first end of the shaft,
- v) a brush mounting apparatus having a first yoke, a second yoke, a universal joint cross, a first internal restricted swing mechanism, and a second internal restricted swing mechanism, said first yoke and second yoke each have a first tine, a second tine, a shaft connector, an inner yoke surface, and an outer yoke surface, said universal joint cross has four ends, said first and third ends of said universal joint cross sized and shaped to oppose each other and said second and fourth ends of said universal joint cross sized and shaped to oppose each other, said first and third ends of said universal joint cross are pivotally connected to said first and second tines of said first yoke, respectively, and said second and fourth ends of said universal joint cross are pivotally connected to said first and second tines of said second yoke, respectively, said shaft connector of said first yoke is connected to said second end of the shaft, said shaft connector of said second yoke is connected to the wrap brush assembly, said first internal restricted swing mechanism is sized and shaped to approximate said inner yoke surface of said first yoke, said first internal restricted swing mechanism is situated between said first and second tines of said first yoke and is pivotally attached to said first and second tines of said second yoke, and said second internal restricted swing mechanism is sized and shaped to approximate the inner yoke surface of said second yoke; said second internal restricted swing mechanism is situated between said first and second tines of said second yoke and is pivotally attached to said first and second tines of said first yoke; said method comprising the steps of:

rotating the wrap brush assembly about an axis that is generally parallel to

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one of many the exterior surfaces of the vehicle;

engaging the wrap brush assembly against the exterior surface of the advancing vehicle;

moving the rotating wrap brush assembly about the exterior surface or surfaces of the advancing vehicle; and

disengaging the wrap brush assembly from any of the surfaces of the vehicle as the vehicle advances past the wrap brush assembly.

12. (withdrawn) A method of cleaning any of many exterior surfaces of a vehicle as the vehicle is driven through a vehicle wash apparatus that includes:

- i) a wrap brush assembly supporting means,
- ii) a wrap brush assembly for washing one or more of the exterior surfaces of the vehicle relative thereto,
- iii) a shaft with an axis for rotating the wrap brush assembly, the shaft having a first end and a second end,
- iv) a motor means for rotating the shaft, the motor means is mounted on the wrap brush assembly supporting means and is connected to the first end of the shaft,
- v) a brush mounting apparatus having a first yoke, a second yoke, a universal joint cross, a first internal restricted swing mechanism, and a second internal restricted swing mechanism, said first yoke and second yoke each have a first tine, a second tine, a shaft connector, an inner yoke surface, and an outer yoke surface, said universal joint cross has four ends, said first and third ends, of said universal joint cross sized and shaped to oppose each other and said second and fourth ends of said universal joint cross sized and shaped to oppose each other, said first and third ends of said universal joint cross are pivotally connected to said first and second tines of said first yoke, respectively, and said second and fourth ends of said universal joint cross are pivotally connected to said first and second tines of said second yoke, respectively, said shaft connector of said first yoke is connected to said second end of the shaft, said shaft connector of said second yoke is connected to the wrap brush assembly, said first internal restricted swing

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mechanism is sized and shaped to approximate said inner yoke surface of said first yoke, said first internal restricted swing mechanism is situated between said first and second tines of said first yoke and is pivotally attached to said first and second tines of said second yoke, and said second internal restricted swing mechanism is sized and shaped to approximate the inner yoke surface of said second yoke; said second internal restricted swing mechanism is situated between said first and second tines of said second yoke and is pivotally attached to said first and second tines of said first yoke; said method comprising the steps of:

rotating the wrap brush assembly about an axis that is generally parallel to one of many the exterior surfaces of the vehicle;

driving the vehicle into the vehicle wash apparatus such that the wrap brush assembly engages against an exterior surface of the driven vehicle;

driving the vehicle through said vehicle wash apparatus such that the wrap brush assembly cleans any of the surfaces of the vehicle as the vehicle is driven past the wrap brush assembly;

deflecting the wrap brush assembly, as needed, relative to the exterior surface of the driven vehicle; and

driving the vehicle through said vehicle wash apparatus such that the wrap brush assembly disengages from any surface of the vehicle as the vehicle is driven away from the wrap brush assembly.

13. (withdrawn) A brush mounting apparatus for a vehicle wash apparatus comprising:

- i) a wrap brush assembly supporting means,
- ii) a wrap brush assembly for washing one or more exterior surfaces of a vehicle relative thereto, the wrap brush assembly having a first end and a second end,
- iii) a shaft with an axis for rotating the wrap brush assembly, the shaft having a first end and a second end,
- iv) a motor means for rotating the shaft and mounted on the wrap brush assembly

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supporting means and is connected to the first end of the shaft,

v) a moveable bushing located in a channel of a rotatable mounting, said rotatable mounting is located on the wrap brush assembly supporting means,

vi) a brush mounting apparatus having a first yoke, a second yoke, a universal joint cross, a first internal restricted swing mechanism, and a second internal restricted swing mechanism, said first yoke and second yoke each have a first tine, a second tine, a shaft connector, an inner yoke surface, and an outer yoke surface, said universal joint cross has four ends, said first and third ends of said universal joint cross sized and shaped to oppose each other and said second and fourth ends of said universal joint cross sized and shaped to oppose each other, said first and third ends of said universal joint cross are pivotally connected to said first and second tines of said first yoke, respectively, and said second and fourth ends of said universal joint cross are pivotally connected to said first and second tines of said second yoke, respectively, said shaft connector of said first yoke sized and shaped to connect to the second end of the shaft, said shaft connector of said second yoke is connected to said first end of the wrap brush assembly, said second end of the wrap brush assembly is pivotally connected to said moveable bushing, said moveable bushing, said rotatable mounting, and said channel operate such that the wrap brush assembly can rotate freely within a deflection angle of the axis and be supported at said second end of the wrap brush assembly, said first internal restricted swing mechanism is sized and shaped to approximate said inner yoke surface of said first yoke, said first internal restricted swing mechanism is positioned between said first and second tines of said first yoke and is pivotally attached to said first and second tines of said second yoke, and said second internal restricted swing mechanism is sized and shaped to approximate the inner yoke surface of said second yoke; said second internal restricted swing mechanism is positioned between said first and second tines of said second yoke and is pivotally attached to said first and second tines of said first yoke.

14. (withdrawn) A method of cleaning any of many exterior surfaces of a vehicle as the vehicle advances through a vehicle wash apparatus that includes:

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- i) a wrap brush assembly supporting means,
- ii) a wrap brush assembly for washing one or more exterior surfaces of the vehicle relative thereto, the wrap brush assembly having a first end and a second end,
- iii) a shaft with an axis for rotating the wrap brush assembly the shaft having a first end and a second end,
- iv) a motor means for rotating the shaft, the motor means is mounted on the wrap brush assembly supporting means and is connected to the first end of the shaft,
- v) a moveable bushing located in a channel of a rotatable mounting, said rotatable mounting is located on the wrap brush assembly supporting means,
- vi) a brush mounting apparatus having a first yoke, a second yoke, a universal joint cross, a first internal restricted swing mechanism, and a second internal restricted swing mechanism, said first yoke and second yoke each have a first tine, a second tine, a shaft connector, an inner yoke surface, and an outer yoke surface, said universal joint cross has four ends, said first and third ends of said universal joint cross sized and shaped to oppose each other and said second and fourth ends of said universal joint cross sized and shaped to oppose each other, said first and third ends of said universal joint cross are pivotally connected to said first and second tines of said first yoke, respectively, and said second and fourth ends of said universal joint cross are pivotally connected to said first and second tines of said second yoke, respectively, said shaft connector of said first yoke is connected to said second end of the shaft, said shaft connector of said second yoke is connected to the first end of the wrap brush assembly, said second end of the wrap brush assembly is pivotally connected to said movable bushing, said moveable bushing, said rotatable mounting, and said channel operate such that the wrap brush assembly can rotate freely within a deflection angle of said axis and is supported at said second end of the wrap brush assembly, said first internal restricted swing mechanism is sized and shaped to approximate said inner yoke surface of said first yoke, said first internal restricted swing mechanism is situated between said first and second tines of said first yoke and is pivotally attached to said first and second tines of said second yoke, and said second internal restricted swing mechanism is sized and shaped to approximate the inner

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yoke surface of said second yoke; said second internal restricted swing mechanism is situated between said first and second tines of said second yoke and is pivotally attached to said first and second tines of said first yoke, said method comprising the steps of:

rotating the wrap brush assembly about an axis that is generally parallel to one of many the exterior surfaces of the vehicle;

engaging the wrap brush assembly against the exterior surface of the vehicle;

moving the vehicle past the rotating wrap brush assembly that is supported at both said first and second ends to wash any of the many exterior surfaces of the vehicle;

deflecting the wrap brush assembly, as needed, relative to the exterior surface of the driven vehicle; and

disengaging the wrap brush assembly from any of the many exterior surfaces of the vehicle.

15. (withdrawn) A method of cleaning any of many exterior surfaces of a vehicle as the vehicle is driven through a vehicle wash apparatus that includes:

- i) a wrap brush assembly supporting means,
- ii) a wrap brush assembly for washing one or more of the exterior surfaces of the vehicle relative thereto,
- iii) a shaft with an axis for rotating the wrap brush assembly, the shaft having a first end and a second end,
- iv) a motor means for rotating the shaft, the motor means is mounted on the wrap brush assembly supporting means and is connected to the first end of the shaft,
- v) a brush mounting apparatus having a first yoke, a second yoke, a universal joint cross, a first internal restricted swing mechanism, and a second internal restricted swing mechanism, said first yoke and second yoke each have a first tine, a second tine, a shaft connector, an inner yoke surface, and an outer yoke surface, said universal joint cross has four ends, said first and third ends of said universal joint cross sized and shaped to oppose each other and said second and fourth ends of said universal joint cross sized and shaped to oppose each other, said first and third ends of said universal joint cross are

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pivotally connected to said first and second tines of said first yoke, respectively, and said second and fourth ends of said universal joint cross are pivotally connected to said first and second tines of said second yoke, respectively, said shaft connector of said first yoke is connected to said second end of said shaft, said shaft connector of said second yoke is connected to the wrap brush assembly, said first internal restricted swing mechanism is sized and shaped to approximate said inner yoke surface of said first yoke, said first internal restricted swing mechanism is situated between said first and second tines of said first yoke and is pivotally attached to said first and second tines of said second yoke, and said second internal restricted swing mechanism is sized and shaped to approximate the inner yoke surface of said second yoke; said second internal restricted swing mechanism is situated between said first and second tines of said second yoke and is pivotally attached to said first and second tines of said first yoke; said method comprising the steps of:

rotating the wrap brush assembly about an axis that is generally parallel to one of many the exterior surfaces of the vehicle;

driving the vehicle into the vehicle wash apparatus such that the wrap brush assembly engages against an exterior surface of the driven vehicle;

driving the vehicle through said vehicle wash apparatus such that the wrap brush assembly cleans any of the surfaces of the vehicle as the vehicle is driven past the wrap brush assembly;

deflecting the wrap brush assembly, as needed, relative to the exterior surface of the driven vehicle; and

driving the vehicle through said vehicle wash apparatus such that the wrap brush assembly disengages from any surface of the vehicle as the vehicle is driven away from the wrap brush assembly.